REMARKS

1. Claims 1-60 are pending in the present application. Claims 1-56 stand rejected. Claims 57-60 are subject to restriction. Per the examiner's request, applicants have pointed out expressly where intrinsic and extrinsic are explained in the original specification.

Election/Restriction

Applicants respectfully request reconsideration of the restriction requirement. The Examiner states that additional claims 57-60 are directed to an independent invention, because they add the limitation "creating a buyer's specification of at least one market protocol," which was not presented in the original set of claims. Applicants traverse the restriction. In claim 1, we describe: (a) creating a buyer's abstract representation of at least one attribute of a request, and the relationship between at least one utility of the request and at least one state of the at least one attribute;

The limitation of "specification of at least one market protocol" is a special version of an abstract representation of a request, in which the market mechanism is the attribute of interest. Thus, since the new claims should be considered and examined together with claims 1-56. No additional searching in a separate class should be necessary. Therefore, applicant respectfully requests that the restriction be withdrawn. Applicants have also added material to the independent claims to clarify the use of intrinsic and extrinsic attributes. The specification of at least one market protocol is a special case of at least one state of an extrinsic attribute.

On OA P. 2. the examiner distinguishes between Claim 57. "*A method for automatically providing a market*" and Claim 1. "*computer implemented method for automatically finding the best matches between buyers' requests and sellers' offerings in a market.*" Merriam Webster's Online Dictionary defines market (4.d) as "*the area of economic activity in which buyers and sellers come together and the forces of supply and demand affect prices.*" We also note that in the 2004 paper: "Model-Driven Resource Management for Distributed Real-Time and Embedded Systems" by Liu et al, "extrinsic attributes" are presented as "properties of the

environment". This use, is consistent with our use within the invention, and supports our contention that the limitation of "specification of at least one market protocol" is exemplary of an extrinsic attribute as used in a buyers' specification or a sellers' specification. With respect to the current invention, the market created is precisely the composition of all assignments of *"buyers' requests and sellers' offerings"* within some area of commerce. We believe that this is consistent with current usage. Therefore, Applicants respectfully submit that claims 57-60 should be examined at this stage of the prosecution.

Claim Rejections -35 USC § 112

2. On OA P. 2, the Examiner states:

"Claims 1-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject mailer which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The new matter is not limited to "plurality of intrinsic or extrinsic attributes', but includes all newly added limitations such as: "having one or more processors or virtual machine, one or more memory units , "matches in computer memory", etc. These added matters in preamble and claimed limitations cannot be found in original specification. intrinsic or extrinsic are not disclosed/explained in specification what is included or excluded. Examiner cannot find any closes reference to these added limitations in specification. This rejection will be removed when applicant/attorney positively show that theses are in original specification (page number and lines)."

Applicants respectfully submit that regarding use of intrinsic and extrinsic attributes, the original application explicitly mentions intrinsic or extrinsic attributes in the following places: (P 27, L 20-22 - claim 5); and (P34, L23-25 - claim 32). The original application also points out, on (P13,L23 - P14, L2):

"In this invention, it is important to create an abstract representation of the goods that are offered by a seller. An offersheet is a list of features regarding the specifications of those goods, including but not limited to: **physical specifications; performance measurements, compatibility with other goods; statements of conformance to standards; sets of allowed or preferred buyers; third party ratings or characterization of the buyers; times; quantities; and prices**. Also included in the offersheet are an indication of what **negotiating protocols are permitted for the purpose of gaining an agreement, and the expiration date**, beyond which the seller is no longer interested in using the invention to transact a sale. Each feature of an offersheet has a label, a value that describes a state or cost of the feature, and a source that indicates the domain in which the feature is found. The same functions that are used to represent the relationship between the satisfaction of a request with states of an attribute may be used to represent the relationship between the price of the offer and states of an attribute of the offer."

Intrinsic attributes (of the goods) mentioned above include:

"physical specifications; performance measurements; statements of conformance to standards; compatibility with other goods"

Extrinsic attributes (with respect to the environment) mentioned above include:

"third party ratings or characterization of the buyers; sets of allowed or preferred buyers; an indication of what negotiating protocols are permitted for the purpose of gaining an agreement, and the expiration date"

Additionally, in FIG.2, is an example specifying the degree of satisfaction with three alternative values for the extrinsic attribute "Protocol" : "1.0 at Dutch", "0.7 at Vikery", and "0.5 at English". Another extrinsic attribute of FIG. 2 is "Special" – the attribute that says the

buyer can take delivery at the rate of 20 units per month. On (P15, L1-5), the specification
states:

> "in the preferred embodiment, calculation of the Strike Price depends on the
> protocol (**mutually but independently chosen by the buyer and seller**) - Common
> protocols are *advertisement,* - where the seller's price is fixed, and *split* - where the buyer
> and seller split the difference between their respective reserve values"

Also, in (P21, L13-L26) the specification notes that multiple protocols can be used, and
that those protocols are elected mutually by the negotiating agents (the BNA and the CAN), and
that the specification of one or more protocols is provided as data to the system from market
participants, this is further evidence of the system providing an abstract representation of a
plurality of intrinsic attributes (which purely describe the good) or extrinsic attributes (which
describe the environment) .

Applicants respectfully submit concerning the addition of multiple processors, memory
and matches in memory, the specification, (P17, L17-20) points out:

> "It should be noted that, in the preferred embodiment, there is more than one instance of
> the Buyers' Consortium Negotiation Agent - running on separate processors, using
> separate memory, and, potentially, specializing in different segments of the market"

Also, in the original specification, (P30, L16-18) (Claim 10) :

> "using a multiagent system to distribute the processing across many processors and
> memory devices to achieve timely calculations of best assignments and quantities"

Also, in the original specification, (P14,L14-P15,L4) :

> "In a preferred embodiment, the software system used to represent and communicate
> buyers and sellers views of the transaction, to find the transactions which maximize the
> markets excess value, and to provide a means for automatically or interactively achieving
> agreements to the proposed transactions, and to preserve requisite privacy, anonymity,

and legitimacy of market participants, is built using a methodology known as a multiagent system. **Multiagent systems** are an approach to software architecture that support intelligent interaction, **scaleability** [sic], and robustness, while permitting relatively independent development of component software modules. Rather than function-call relationships between modules, message-passing conversations are the customary way to describe interaction. Each individual agent is capable of responding to a variety of messages, creating agendas to achieve plans, and executing a variety of tasks to achieve those plans. Available architectures supporting such multiagent systems include: DECAF, Zeus, and FIPA-OS. The system also exploits optimization modules capable of optimizing an arbitrary composition of non-linear functions of discrete variables. In the preferred embodiment, these modules use the Quantum Leap Problem Solving Engine to find best solutions quickly, but other approaches to optimization might also be used, including, but not limited to: heuristic search, numeric optimization, genetic algorithms, mixed integer programming, simulated annealing, dynamic programming, MonteCarlo and quasi-MonteCarlo methods, interval methods, Lagrangian relaxation methods, meta-genetic algorithms, differential genetic programming, sequential linear approximation, sequential quadratic approximation, constraint propagation methods, gradient methods, enumeration, parallel execution of optimization techniques, and interleaved execution of techniques"

Applicants respectfully maintain that Multiagent systems and the Quantum Leap Problem Solving Engine both provide scalability by distributing computation over multiple processors or virtual machines, and over multiple memory units.

Note also that in the "Scalability and Scheduling in an Agent Architecture", by Graham, et al, (introduced as a reference ?) the scalability of a multiagent system running on multiple virtual machines and multiple physical processors is clearly demonstrated.

Claim Rejections - 35 USC § 103

3. On OA P. 3, the Examiner states:

> *"Claims 1-6 and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoham et al (hereinafter Shoham - US 6,584,451) in view of Lupien et al (6,012,046) and Van Etten et al. (US 6892,185)*

> *" Re. Claim 1, Shoham discloses (a) creating a buyers abstract representation of at least one attribute of a request, and the relationship between at least one utility of the request and at least one state of the at least one attribute [see entire document particularly - Abstract; Figure 2; C2 L1-L32; C3 L40-L59; C4 L41-L47; C12 L25-L30]; (b) creating a sellers abstract representation of at least one attribute of an offer, and the relationship between the total price of the offering and at least one state of the at least one attribute [6A-6B; C2 L47-L56 j; (e) signaling that the quantities and identities of assignments are accepted and that the transaction is committed by buyers and sellers [figures 6B, 12#1232; C2 L25-L27; C6 L9-L16]. "*

Applicants respectfully submit that Shoham's representation cannot be used for composition of a **plurality of arbitrary attributes** (from the currently amended Claim 1) or for **combinations of intrinsic or extrinsic attributes**, (from the currently amended Claim 1).

And (on OA P4) the Examiner notes, :

> *"Shoham **does not explicitly disclose** (c) computing a rating for overall satisfaction of the at least one attribute of a request with respect to a given offer, and (d) determining the quantity and identity of assignments of sellers' offerings to buyers' requests that produces the best set of matches for a given market, plurality of intrinsic or extrinsic attributes.*

> *However, **RFQ, RFP, specifications, procurements, purchase orders are old and well known** specially in non-commercial items (industrial, nuclear, defense, projects, etc), where the requisitions are detailed with protocols from what will be supplied, how will be supplied/delivery/schedule, when will be supplied/shipped, how long the price quotation is valid, how the payments will be made. The*

> *supplier and the buyer agree/modify/finalize the terms of the contract before the purchase order is written.*

Applicants respectfully submit that *"RFQ, RFP, specifications, procurements, and purchase orders"* exist in only some domains of commerce an not in others precisely because the process of assembling, communicating, and negotiating around such specifications is so arduous, time-consuming, and expensive. If it were obvious to construct and use a general representation of overall satisfaction with respect to such specifications, then *"industrial, nuclear, defense projects"*, and their suppliers would have been expected to universally adopt such a system. Additionally, *"industrial, nuclear, defense projects"* can afford to maintain a staff of people to write such documents, evaluate the responses, etc, even for a single purchase. On the other side of each transaction are typically folks who *read RFPs*, and *write responses*, based on the products, services and technical capabilities of their companies. **In contrast**, the DME makes such specification and representation practical for a much broader segment of both buyers and sellers, for domains where it would make no economic sense to employ human agents to buy and sell via these manual, information-rich mechanisms. Additionally, **even in the cases such as *"industrial, nuclear, defense projects"* where human staffers currently conduct such evaluations,** the DME will improve the accuracy and efficiency of their work by supporting a wider number of buyers and sellers in the market place; by providing all parties with a standard mechanism and scale for specification and evaluation; by providing much faster evaluation (the RFQ/ Evaluation cycle can take months, even years); and by providing and exploiting market information (e.g. from historical analysis of similar requests and fulfillments) that such negotiation staff members currently lack.

The examiner continues (OA, P4) :

> *"Van Etten et al. discloses procurement system for special items with plurality of intrinsic or extrinsic attributes [see at least, col. 1 lines 1-30; col. 2 lines 10-43; col. 5 lines 7-26]. . It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham and include plurality of intrinsic or extrinsic attributes, as disclosed by the Van*

> *Ellen et al., to describe the items with all possible attributes for acquiring the item*
> *needed or an item which is the closes compatible to buyer's specification"*

Applicants respectfully submit the cited lines from Van Etten make no mention of extrinsic attributes, though he does mention (C5 L21-27) , "static attributes" as "intrinsic properties being those that do not vary based on a SKU". Applicants also posit that Van Etten's reliance on SKUs is a clear indication that his buyer is concerned with boolean criteria that might be found in a catalog, rather than general representations of the degree of satisfaction with respect to states of attributes. Additionally, Van Etten's system (C5, L6-13) describes a representation of (strictly) boolean attributes – which are either matched or not matched by an offering from some manufacturer:

> *"Once a leaf class is selected, a parametric search engine is presented as shown*
> *at point 94. The parametric search engine presents the attributes associated with*
> *a specific item leaf class and valid values associated with each attribute. The*
> *attributes can be presented in a variety of selection objects, such as drop-down*
> *boxes, list boxes, and sets of check boxes as shown in the example of FIG. 6. The*
> *user selects the value and clicks an operator button. Within the Parametric*
> *Search, there is an undo button that removes the value in the search for items"*

The Applicants note that Van Etten's system is aimed at creating a special order to be communicated to manufacturers, and that Van Etten's representation of attributes has no notion of a rating of the degree of satisfaction with the attributes. Nor is there any mention in Van Etten of a motivation to combine Van Etten's attributes with some notion of product satisfaction. Note also that Van Etten's invention is aimed at the problem of identifying potential suppliers, rather than (directly) obtaining satisfactory goods. See (C1 L54-57) :

> *In particular, it would be highly desirable to be able to receive a special*
> *requisition, and use a methodology to **automatically select most likely suppliers***
> ***without human intervention. If such an automatic selection process were***
> *available, then the special **requisition could automatically be sent to each vendor***
> *for review and quoting.*

The examiner continues (OA, P5):

> *Lupien discloses (c) computing a rating for overall satisfaction of the at least one attribute of a request with respect to a given offer, and (d) determining the quantity and identity of assignments of sellers' offerings to buyers' requests that produces the best set of matches for a given market [Lupien — abstract; C1 L50-L52; C2 L65 to C3 L5; C11 L21-L46]to provides a substantially greater price discovery across the full range of trade sizes. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham and Van Etten et al. and include computing a rating for overall satisfaction of the at least one attribute of a request with respect to a given offer, and (d) determining the quantity and identity of assignments of sellers' offerings to buyers' requests that produces the best set of matches for a given market, as disclosed by Lupien, to provide a crossing network that matches buy and sell orders (items, goods, etc.) based on satisfaction and quantity profile."*

Applicants respectfully submit that Lupien's method is not appropriate for an arbitrary number (plurality) of attributes, which may have an arbitrary number (plurality) of states affecting the degree of satisfaction. Though Lupien mentions (in the Abstract) "Factors other than price and quantity may also be used to determine the degree of satisfaction" he does not describe a representation that is extensible to any number of attributes, does not describe how (non-market) attributes would be used in finding rating for overall satisfaction, and demonstrates only examples involving price and quantity. Applicants respectfully also note that Lupien (C11, L53) is disclosing the density profile "of the market in a given instrument". This describes a good that has been **identified** (i.e. shares of IBM) **rather than specified** (i.e. shares of a Fortune 500 company). Additionally, it is notable in Lupien (FIG 8, 110, 112, and (C11, L1-16) that Lupien's invention intends to rank-order the satisfaction for all seller-buyer pairings. This ordering is only computationally realistic for the simple (price v. quantity) profiles offered in the examples. Lupien does not disclose a way of rank-ordering the matches for pairings involving an arbitrary number of attributes, or an abstract representation of the buyer's satisfaction with the states of those attributes. Even if Lupien's representation could be extended to arbitrary attributes, the rank-ordering method would not be appropriate for finding best matches. For instance, consider rank ordering the buyer/seller combinations for alternators considering just 5 attributes: {Price, Quantity, Delivery-time, Amperage, and Warranty-length} assuming that price can range from 0 to $300.00 in $0.0001 increments (large quantities may include fractions of a

cent) and that Quantity can range from 0 to 1000 by 1, and that Delivery Time can range from ½ day to 60 days, by half-days, and that Amperage can vary from 30 to 90 by 0.25 amp increments, and that warranty-length can vary from 0 months to 120 months, and that there are 1000 buyers and 50 sellers in the market place The number of combinations that must be considered and ordered, per Lupien's approach, is: 5.1408E+20. For Lupien's scheme to work, it would have to order far more combinations of choices than is feasible. Thus, combining Lupien with Shoham and Van Etten would not teach the current invention. Additionally, there is no motivation to combine Van Etten with Shoham, nor to combine the combination of Van Etten and Shoham with Lupien. Applicants also respectfully contend that there is no obvious way to modify Lupien's invention to satisfy Shoham-style buyers, or Shoham-style buyers clubs.

The examiner further states: (OA, P5):

> "Re. Claim 2, Lupien further discloses (a) recording the request and offer data, along with the transaction price and quantity, for the committed transactions, and for other transactions that scored sufficiently well, and for requests and offers that were not matched in the market [Lupien - C6 L14-L29] to store the buyers/sellers profiles in database which can be used later. (b) inferring (COLLECTING) market value relationships from other data sources, such as sellers' advertisements, and or buyers' requests for proposals (market prices

> [C1 L50-52J to set a market price. And (c) using of mathematical function approximation techniques for constructing market value functions that describe the relationship between price and the states of various attributes in a hypothetical market [C5 L1-L7; C14 L25-L40] to compute a single size and price for transition. "It would have been obvious at the time the invention was made to a person having ordinary skill in the art to combine the disclosures of Shoham and Van Etten et al. and Lupien to provide a system which can store market data and utilize the data to calculate price based on the stored and accumulated values for better approximate market value or average value."

Applicants respectfully submit that because Lupien's buy and sell profiles lack the generality of the DME's buyers abstract representations and sellers abstract representations, the database mentioned by Lupien does not have the same utility in providing market information with respect to price versus an arbitrary attribute. For instance, the DME's Accumulated Value Model can be used to price the market value of specific attributes of a product (for instance, to

learn that the price of a 300 Amp alternator is 1.2 times the price of a 200 Amp alternator, and

products from Tier 1 manufacturers cost 10% more than comparable products that are

unrestricted in their source). Notably, the DME's Market Information agent collects

information on successful transactions to learn the market value of attributes, but also collects

unsuccessful transactions that provide additional information for the marketplace (e.g. that there

is an unsatisfied demand for high capacity alternators). As Lupien's profiles lack the specificity

and generality of the DME's representation, it would therefore be fruitless to combine the

teaching of Shoham and Van Etten et al. and Lupien. Additionally, Applicants respectfully posit

that there is no suggestion as to the motivation to combine these three approaches, which are

predicated on irreconcilably different views of the market, of suppliers, and of the descriptions of

goods in the marketplace.

The examiner continues (OA, P6):

> *"Re. Claims 3-4, Shoham discloses (a) forming the best partition of the buyers'
> requests into groups or singletons of requests whose representation of attributes
> can be satisfied by the same seller offering [C4 L56 to C5 L15J;(b) forming the
> combined abstract representation of the requests for the consortium, said
> representation which will satisfy each buyer in the consortium [C1 L50-L60].
> Shoham does not explicitly disclose (c) constructing an artificial negotiating
> entity that will represent at least one consortium, and can conceal the identities of
> the buyers in the consortium. However, Lupien further discloses this step [L40-
> L67] to preserve the anonymity of the traders. "It would have been obvious at the
> time the invention was made to a person having ordinary skill in the art to
> combine the disclosures of Shoham and Van Ellen et al. and Lupien to not
> discloses the identity of the trader as a business practice and better competition."*

Applicants respectfully submit that the only attributes that Shoham's system considers

are price and quantity, rather than an arbitrary number of attributes, so his invention does not

construct a representation of attributes can be satisfied by the same seller offering. The DME

considers *all* of the arbitrary number of attributes of buyer-members of a buyer's partition in

constructing the partition. Additionally, because Shoham's "goods" are identified, rather than

specified, he has no opportunity to build a representation of the attributes of a partition involving

multiple buyers. For instance, if buyer A requests 20 amp alternators, and buyer B requests 21 amp alternators, and buyer C requests 19 amp alternators, and buyer D requests 53 Amp alternators, it is likely that buyers A, B, and C would be aggregated, and the joint representation would be totally satisfied (in this single attribute) by 21 Amp alternators, while buyer D's request would be a singleton, because 53 Amp alternators are much more costly (given information from the accumulated market value model) than 21 Amp Alternators. Thus, Applicants respectfully posit that Shoham does not anticipate claims 3-4, and the combination of the disclosures of Shoham and Van Ellen and Lupien would not anticipate claims 3-4, nor is there evidence of motivation among Shoham and Van Ellen and Lupien to combine the three approaches.

The examiner continues (OA, P7):

> "Re. Claim 5, Lupien further discloses wherein the at least one attribute includes both intrinsic qualities of the object of the request or offer, and extrinsic qualities of the transaction or market protocols, wherein the extrinsic attributes comprise commitment protocols and time qualifications [C5 L1-L7] to allow traders to input variables (attributes) other than price and quantity as a profile to provide specifics what they are looking for. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham and Van Ellen et al. and include intrinsic qualities and extrinsic qualities of trading object to better describe the nature of the object of trade."

Applicants respectfully submit that Lupien's satisfaction density profile does not distinguish between qualities of the object of the request or offer and extrinsic qualities of the transaction or market protocols. Additionally, though Lupien's invention allows the input of "additional satisfaction density profiles", he provides no means computing a rating for overall satisfaction of multiple satisfaction density profiles with respect to an offer. Thus, Lupien's invention does not accomplish the capabilities of DME Claim 5 in the context of DME Claim 1 and DME Claim 2. None of the variables mentioned by Lupien is an extrinsic attribute comprising a transaction or market protocol or time qualification. Applicants respectfully contend that the combination of the disclosures of Shoham and Van Ellen and Lupien would not

anticipate claims 5, nor is there evidence of motivation among Shoham and Van Ellen and

Lupien to combine the three approaches.

The examiner further states: (OA, P7):

> *"Re. Claim 6, Shoham discloses (a) combining abstract representations from at least two market participants, to combine maximize the satisfaction for the consortium of those participants, and (b) using buyers' consortiums rather than individual buyers and sellers consortiums, or individual sellers, in determining the best set of matches, and whereby a transaction can be accomplished between consortia, rather than individual buyers and sellers (OBCS and SellCo which can be a company made of sellers e.g., agricultural cooperative club) [C2 L33-65]. ...*
>
> *Claims 28-33 have same limitations as claims 1-6 above respectively. Therefore these claims are rejected with same rational as claims 1-6 (Note: Shoham online system inherently includes memory device, matches are done by computer, inputs, etc)."*

Applicants respectfully submit that it is clear from Shoham, (C2,L57- C3, L7; C4,L47-

C5, L14) that OBCS is not (by itself and automatically) forming partitions of buyers. Instead,

different buyers are **electing** to join different buyer's clubs, potentially winding up with

partitions that are far from optimal with respect to the DME's Accumulated Value Model. Also,

in (C4,L47-C5, L1) it is clear that buyers are incrementally and interactively participating in the

market. This behavior is optional within the DME, but is not the typical DME behavior where a

buyer provides a specification of the goods that he wants, and the system automatically places

his order in the correct consortium (if any), automatically represents his interests in finding the

most satisfactory (versus any number of arbitrary attributes) offer, and automatically performs

transactions to acquire the specified goods. Applicants also note that though Shoham's online

system necessarily refers to a memory device, computer, etc., the system as described is not

scaleable to any arbitrary number of buyers and sellers, who are concerned with any arbitrary

number of attributes of goods. Applicants additionally note that the particular use of memory

and processors by the DME, constructed from multi-agent systems and scalable optimization

systems, provides pragmatic advantages not anticipated by Shoham, and renders Shoham in

appropriate as anticipatory art. The Applicants respectfully maintain Shoham does not anticipate

Claim 6, nor does the combination of Shoham and Van Ellen and Lupien would not anticipate

claims 28-33, nor is there evidence of motivation among Shoham and Van Ellen and Lupien to

combine the three approaches.

The examiner continues (OA, P8):

> *Claims 7-13, 16, 18, 22-27 and 34-40, 43, 45, 49-56, are rejected under 35 U.S.C.*
> *103(a) as being unpatentable over Shoham, Van Etten et al. and Lupien, as*
> *applied to claims 1-6 and 28-33 above, further in view of Conklin et al*
> *(hereinafter Conklin — US 6,141,653).*
>
> <u>*Re. Claim 7,*</u> *Shoham discloses (a) forming the best partition of the buyers'*
> *requests into groups or singletons of requests whose representation of attributes*
> *can be satisfied by the same seller offering and (b) forming the combined abstract*
> *representation of the requests for the consortium, said representation which will*
> *satisfy each buyer in the consortium [C2 L57 to C3 L7; C4 L47 to C5 L14].*
> <u>*Shoham does not explicitly disclose*</u> *(c) constructing an artificial negotiating*
> *entity that will represent at least one consortium, and can conceal the identities of*
> *the buyers in the consortium; and automatically joining sellers' offerings in a*
> *consortium by: (d) forming the best partition of the sellers' offerings into groups*
> *or singletons of offerings which considered together achieve the highest values on*
> *hypothetical market transactions, with regard to the value functions constructed*
> *in claim 2; (e) forming the abstract representation of the offerings for the*
> *consortium, said representation which will represent each offer in the*
> *consortium; and (f) constructing an artificial negotiating entity that will represent*
> *at least one consortium, and can conceal the identities of the sellers in the*
> *consortium, and using the market value data from transactions to construct*
> *mathematical function approximations predicting the value of states of attributes*
> *for hypothetical transactions to construct a stream or compendium of market*
> *information. However, Conklin discloses (c) constructing an artificial negotiating*
> *entity that will represent at least one consortium, and can conceal the identities of*
> *the buyers in the consortium; and automatically joining sellers' offerings in a*
> *consortium by: (d) forming the best partition of the sellers offerings into groups*
> *or singletons of offerings which considered together achieve the highest values on*
> *hypothetical market transactions (e) forming the abstract representation of the*
> *offerings for the consortium, said representation which will represent each offer*
> *in the consortium; and (f) a means of constructing an artificial negotiating entity*
> *that will represent at least one consortium, and can conceal the identities of the*
> *sellers in the consortium, and using the market value data from transactions to*
> *construct mathematical function approximations predicting the value of states of*
> *attributes for hypothetical transactions to construct a stream or compendium of*
> *market information [Abstract, Figures 1c -1g, 1j-1n,3; C8 L49-L52; C18 L37-*

L65; C25 L21-L34] to provide comprehensive iterative bargaining abilities for both buyers and sellers that enable them to negotiate all the terms and conditions of a transaction not just the price. Lupien discloses and using the market value data from transactions to construct mathematical function approximations predicting the value of states of attributes for transactions to construct a stream or compendium of market information [C7 30-L53C20 L54 to C22 L45] to achieve highest value of mutual satisfaction. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosures of Shoham and Van Ellen et at. and Lupien and add artificial negotiating entity and hypothetical market transactions, as disclosed by Conklin to provide comprehensive negotiating abilities for both buyers and sellers that enable them to negotiate all the terms and conditions of a transaction not just the price.

Applicants respectfully submit that, as has been presented above, Shoham's buyers clubs fail to anticipate: "a)forming the best partition of the buyers' requests into groups or singletons of requests whose representation of attributes can be satisfied by the same seller offering" and also that Shoham fails to anticipate " b) forming the combined abstract representation of the requests for the consortium, said representation which will satisfy each buyer in the consortium". Note especially in Shoham's discussion (C4, L47-C5L,14)of buyers queued up for bids, and buyers "switching goods", that Shoham lacks "a representation of attributes can be satisfied by the same seller offering" in the sense of Claim 7 – that is, attribute representations that support computation of the relationship between a plurality of attributes and the total price of an offering. Lacking such a representation, Shoham cannot anticipate "b) forming the combined abstract representation of the requests for the consortium". Applicants respectfully offer that Conklin fails to teach "(c) constructing an artificial negotiating entity that will represent at least one consortium, and can conceal the identities of the buyers in the consortium; and automatically joining sellers' offerings in a consortium by: (d) forming the best partition of the sellers offerings into groups or singletons of offerings which considered together achieve the highest values on hypothetical market transactions (e) forming the abstract representation of the offerings for the consortium, said representation which will represent each offer in the consortium; and (f) a means of constructing an artificial negotiating entity that will represent at least one consortium, and can conceal the identities of the sellers in the consortium, and using the market value data from transactions to construct mathematical function approximations predicting the value of

states of attributes for hypothetical transactions to construct a stream or compendium of market information". Applicants assert that Conklin [Abstract] discloses an engine for *iterative bargaining* – wherein participants make offers, evaluate proposed offers, and make counter offers [Abstract]. This is substantially different from an artificial negotiating entity that will represent at least one consortium, and automatically joining sellers' offerings. Though the DME may be used iteratively (by using uncommitted protocols), the *intrinsic mechanism* is that of automatic consortium creation, automatic value matching, and automatic transaction. It is clear in (Conklin C8, L49-64) that the buyer has not pre-specified the attributes of an intentional purchase, but instead has specified suppliers who (he believes) may produce products with desired attributes. Using Conklin's invention, there is no way for the buyer to explicitly represent his degree of satisfaction with the state of various attributed mentioned in a specification. Since this information is not disclosed, there is no way for an entity (such as one of Conklin's "sponsors") to capture market data related to such attributes, nor to capture seller data related to such attributes. Additionally, Conklin's invention fails to negotiate on behalf of the buyer, in terms of the attributes and states of satisfaction. A "sponsored community" in the sense used by Conklin's invention (C18 L7-L11; C18 L18-26; C19 L15-26) is a mechanism for direct human-to-human communication and negotiation, and does not directly represent or consider a specification buyers' requirements, nor a sellers offerings. Because the specification is missing, information collected by Conklin's invention is insufficient for forming the best partition of buyers; or for forming an abstract relationship which will satisfy each buyer in the consortium; or to constructing an artificial negotiating to represent a consortium. Lacking a detailed specification of buyers' states of satisfaction, no entity can adequately represent their interests. The same arguments apply to the construction of sellers consortia. It is especially noteworthy that Conklin (C18, L7-L11 and L18-26) mentions the appointment of a [human] moderator for their negotiations, and the use of teleconferencing to aid in negotiations. This shows that Conklin is speaking in terms of iterative human-to-human negotiations, and not in terms of an automatic system that represents the interests of the particular parties or consortia. If the system were acting in such an automatic way, there would be no need and no opportunity for moderators to intercede. " Applicants respectfully maintain that Lupien, for arguments given previously, does not usefully anticipate "using the market value data from transactions to

construct mathematical function approximations predicting the value of states of attributes for transactions to construct a stream or compendium of market information to achieve highest value of mutual satisfaction", as has been mentioned, Lupien's provides no mechanism to extend his (Lupien C7, L37)satisfaction density profile to arbitrary compositions of attributes, such as would be needed to anticipate the DME. Additionally, as has been mentioned, **Lupien** (FIG 8, 110, 112, Column 11, lines 1-16) **uses rank ordering** to order the satisfaction of buyer-seller pairs, which is not a practical approach for use with any number of arbitrary attributes. Applicants respectfully maintain Shoham does not anticipate Claim 7, nor does the combination of Shoham and Van Ellen and Lupien would not anticipate claims 7, nor is there evidence of motivation among Shoham and Van Ellen and Lupien to combine the three approaches.

The examiner further states: (OA, P10):

> *Re. Claims 8-13, Lupien further discloses further comprising numerically representing the determination of best assignments and quantities as an optimization problem and optimizing the assignments and quantities by finding the total of each buyer's and each seller's satisfaction with the transactions to be committed, comprises matching the at least one attribute of a request and the at least one attribute of an offer by inferring the match of the attribute qualities of a request which are logically implied by attribute qualities of an offer, and further comprising determining the quantity and identity of assignments of sellers' offerings to buyers' requests which produce the best set of feasible matches for a given market, linear regression, numeric optimization, comprising using a total market excess value as the measure of highest total market value. (satisfaction density) [C12 L33 to C14 L55; C12 L33-L36 (linear regression); C13 L48 to C14 L8 (numeric optimization)] to provide optimization approach which maximizes sequentially the mutual satisfaction at each stage of the allocation process, by assigning allocations based upon the highest remaining mutual satisfaction value and where the approach has the virtue of being computationally tractable and generally yielding allocations with tight spreads in price. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham and Van Ellen et at. and Conklin and add optimization, as disclosed by Lupien, to best attributes which satisfies the transactions between the sellers and buyer.*

Applicants respectfully submit that Lupien fails to anticipate Claims 8-13. Significantly, Lupien mentions in (C15, L60-L24) that the assignment problem can be cast as a global non-

linear optimization problem, for which there are numerous alternative optimization approaches. In constructing his optimization model of the problem, Lupien **neglects to demonstrate how preference among any number of states of any number of attributes can be formulated**, nor does he disclose how global optimization can be made to work efficiently in such a case. The Applicants assert that if it was Lupien's motivation to use optimization specifically to provide a practical approach to arbitrary multi-state/ arbitrary multi attribute markets, then the formulation presented would have provided a means to encode such cases as optimization problems. Lupien reinforces his exhaustive combination view of the problem again, in (C16,L37–C17, L24), where he demonstrates "**mutual satisfaction cross products**" as a table representing a contour plot. Again, such a table, and such a plot, is not tractable for arbitrary multi-state/ arbitrary multi-attribute markets.

The examiner further states: (OA, P11):

> *Re. Claim 16 Shoham wherein the request and offer data, the transaction price and quantity, the committed transactions, other transactions that scored sufficiently well, and the requests and offers that were not matched in the market are made available to market participants [C7 L5-L45].*

Applicants respectfully submit that in fact (Shoham C7,L44 – C8,L17) discloses information available to market participants (which Shoham exemplifies as product reviews, descriptions, and prices) and does mention making aggregate information available, on the prices buyers are willing to pay. However**, nothing in Shoham discloses** the request and offer data as they exist in the DME invention, as **that data includes information on an arbitrary set of product attributes, states, and levels of satisfaction, both from the buyer's side and the seller's side**. This information is never represented, used, collected, or distributed by Shoham. Thus, Shoham fails to teach Claim 16 of the invention.

The examiner continues (OA, P11):

> *Re. Claim 18, Shoham, Van Etten et al. or Lupien does not explicitly disclose wherein an ontology is used for inferring the match of the at least one attribute state of a request which is logically implied by the at least one attribute state of an offer. However, ontology or meta-data (as defined by the applicant in remarks)*

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>*is known in object oriented software to capsulate the attributes, properties and functions associated with the property of a instance of an object (class) and store the object as a tool which can be modified without changing the software as whole and make use of the defined object as an entity. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham and Van Ellen et al. and Lupien and include meta-data to make use of object oriented software for ease of use and maintenance of the software.*

Applicants respectfully submit that ontologies, as they are used in the industry, and defined previously, are more narrow, more specialized, and more capable than meta-data for the task of "inferring the match of the at least one state of a plurality of attributes of a request which is logically implied by the at least one state of a plurality of attributes of an offer". Not all meta-data provides such a capability. Additionally, without the DME's explicit representation of the desired states of goods as attributes with values relating to ranges of variability, and without the DME's explicit model of individual or consortia satisfaction with those desired states, there would be no particular be benefit, and hence no motivation to use an ontology to match "the states of a plurality of attributes of a request" to 'at least one state of a plurality of attributes of an offer". Thus, meta-data, as is known in object oriented software, would not be sufficient to anticipate the use of an ontology as it is used in the DME, and there is no discernable evidence of motivation, prior to the DME, to combine of Shoham and Van Ellen et al. and Lupien and meta-data or ontologies.

The examiner continues (OA, P12):

>*Re. Claims 22- 24, Shoham does not explicitly disclose invoking auction protocols when there is at least two requests per one offer or at least two offers per one request, wherein the abstract representation of the relationship of the utility of an attribute of the request, is created using at least one technique selected from the group consisting of (a) linear functions, (b) piece-wise linear functions, (c) logistic functions, (d) cubic splines, (e) look-up tables, and (f) other numeric functions that compute utility with respect to a given attribute's states, and wherein the abstract representation of the relationship between price of the offer and at least two states of an attribute of the offer, is created using at least one technique selected from the group consisting of (a) linear functions, (b) piece-wise linear functions, (c) logistic functions, (d) cubic splines, (e) look-up tables,*

and (f) other numeric functions that compute price with respect to a given attribute's states. However, these are will known for example, generally auction has more than one offer only the highest wins and statistical calculations are commonly down to calculate and predict the probability of success and efficiency of a process or an outcome with costly experiment. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosures of Shoham, Van Etten et al., Lupien and Conklin to add statistical analysis to predict the success of auction prior to auctioning the goods or service.

Applicants respectfully submit claim 22 must be read in the context of its parent claims, especially Claim 1 and Claim 5. The context of invoking auction protocols on requests and offers is more specialized, and non obvious, especially in the case where the protocols themselves are subject to mutual election by buyer and seller (from Claim 5 "wherein the plurality of attributes includes both intrinsic qualities of the object of the request or offer, and extrinsic qualities of the transaction or market protocols, wherein the extrinsic attributes comprise commitment protocols and time qualifications"). Thus the Applicants respectfully contend that the invocation of auction protocols, given the full context of claim 22, is non-obvious. Regarding the use of mathematical functions to construct an "abstract representation of the relationship of the utility of an attribute of the request", or "of the relationship between price of the offer and at least two states of an attribute of the offer" the Applicants respectfully submit that the DME is able to learn these valuations, along with the historical and predicted valuations of particular attribute qualities, for populations of related goods and services, automatically, during continual online analysis of transactions that are optimal, feasible, and infeasible. Applicants respectfully maintain that the representations disclosed by Shoham, Lupien, and Conklin do not provide the generality of specification of intrinsic or extrinsic attributes and related desirable states as disclosed by the DME, and thus no combination of Shoham, Lupien, and Conklin can be used predict the success of an auction, or bid, or offer, for such a market, or the relative value of attributes in a market so constructed. Applicants also respectfully submit that there is no evidence as to motivation for of Shoham, Van Etten et al., Lupien and Conklin to be combined in such a manner.

The examiner continues (OA, P12):

> *Re. Claim 25, Shoham discloses further comprising communicating the abstract representations of requests and offerings by termsheets and offersheets, respectively (allow buyers to quote prices and invite sellers to accept the quote and purchase terms) [C1 L24-L28; C10 L38-L50].*

Applicants respectfully submit that Shoham mentions a "buyers interface for receiving a set of optional purchase terms" but does not disclose the mechanism for mathematically relating those terms to the valuation of a good or service. The ability to automatically compute the value of various possible assignments and transactions, and to find the market value of those assignments and transactions, is enabled by the abstract representation of requests and offerings, which is absent from Shoham, and thus Claim 25 is not anticipated by Shoham.

The examiner further states (OA, P13):

> *Re. Claim 26, Shoham does not explicitly further comprising describing the requests as employment positions and describing the offerings as employee attributes and compensation requirements. However, this is well known that an agent can request for employment.*

Applicants respectfully submit that a key aspect of Claim 26 is that it adapts the DME mechanism to analysis of job/employment/assignment opportunities. Because of the DME's representation of attributes, satisfaction, and value, it can directly represent the rich complexity of employee's qualities, and employer's specifications. Because Shoham does not represent the specification of intrinsic or extrinsic attributes and related desirable states as disclosed by the DME, it would not be obvious to add such representations to Shoham to provide suitable representation of employee attributes and salary requirements.

The examiner further states (OA, P13):

> *Re. Claim 27. Shoham discloses further comprising describing the requests as tasks to be accomplished, and describing the offers as agents, people and or software, willing to accomplish those tasks [C1 L2 L17-L31].*

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Applicants respectfully submit that a key aspect of Claim 27 is that it adapts the DME mechanism to analysis of tasks and resource allocation for agents, people, or software. Because of the DME's representation of attributes, satisfaction, and value, it can directly represent the rich array of the qualities of agents, people, or software, versus task specifications. Because Shoham does not represent the specification of intrinsic or extrinsic attributes and related desirable states as disclosed by the DME, it would not be obvious to add such representations to Shoham to provide suitable representation of tasks or attributes of agents, people, or software.

The examiner further states (OA, P13):

> *Claims 34-40, 43, 45, 49-54 have same limitations as claims 7-13, 16, 18, and 22-27 above, respectively. Therefore these claims are rejected with same rational as claims 7-13, 16, 18, and 22-27.*

Applicants respectfully submit the rejections of claims 7-13, 16, 18, and 22-27 are addressed by the above discussions, and should thus be allowed. Consequently, claims 34-40, 43, 45, 49-54 should be allowed by analogous argument.

The examiner further states (OA, P13):

> *Re. Claim 55, Shoham discloses wherein the information is communicated through the internet by internet protocol messages [C1 L15-L20].*

Applicants respectfully submit that although Shoham uses the internet to support online shopping, he does not do so in the context of the DME claim 37, which provides an improved mechanism for automatic transactions that benefit both buyers and sellers. A substantial benefit of the DME versus Shoham is that the DME can automatically find the best transactions for the benefit of both buyers and sellers, and can effectively provide a much large pool of both buyers and sellers with access to the marketplace. As is evident (in Shoham C4,L9-36) :

> *"The first choice is the number of sellers admitted to the buying session. This choice must be made both for the number of sellers to initially consider, and the number of sellers to present directly to the buyers. Inviting multiple sellers offers clear advantages for the buyer, both in terms of diversity of products offered and competition to drive down prices. Multiple sellers also results in a somewhat*

> *more complicated (and difficult to design) buying session, since rules need to be
> set up for when buyers may switch sellers and similar issues. Most of these issues
> exist even with a single seller, who has multiple products in the buying session.
> (In implementation, multiple goods from a single seller and multiple sellers
> offering multiple goods will likely look exactly the same internally.)"*

Shoham's invention does not support the automaticity of market formation (any number of

buyers or sellers) or market valuation (specification of intrinsic or extrinsic attributes and related

desirable states) as disclosed by the DME. Thus, Shoham's invention is not a substantive

alternative and is not a practical alternative, would not support the scale and processing

requirements satisfied by the DME, and Shoham's use of the Internet does not anticipate the

current invention of claim 55.

The examiner further states (OA, P13):

> *Re. Claim 56. Shoham does not explicitly disclose wherein buyers and sellers
> access the system via web pages, Java clients, or other executable client
> programs. However, this is well known to which allows the user (buyer/seller) to
> place order using commonly distributed web browsers.*

Applicants respectfully submit that, as discussed above, Shoham's does not support the

automaticity of market formation (any number of buyers or sellers) or market valuation

(specification of intrinsic or extrinsic attributes and related desirable states) as disclosed by the

DME. Thus, Shoham's invention is not a substantive alternative and is not a practical

alternative, and the addition of "web pages, Java clients, or other executable client programs"

would not be sufficient for Shoham to anticipate the current invention of Claim 56.

The examiner continues (OA, P14):

> *Claims 14-15, 17, 41-42 and 44 are rejected under 35 U.S.C 103(a) as being
> unpatentable over Shoham, Van Etten et al., Lupien and Conklin as applied to
> claims 10 and 37 above, and further in view of Verba et al (hereinafter Verba —
> US 6236977).*
>
> *Re. claims 14-15 and 17, Shoham, Van Etten et al., Lupien or Conklin discloses
> comprising using a multiagent system to distribute the processing across many*

processors and memory devices to achieve timely calculations of best assignments and quantities, wherein a measure of the utility at the least one state of the at least one attribute is used to compute a rating for the overall satisfaction of a request with respect to a given offering by using at least one technique selected from the group consisting of: (a) weighted fuzzy-logic conjunction operators, (b) weighted geometric means, (c) a weighted version of Yager's T-NORM, (d) weighted arithmetic means, and (e) a weighted combination, with the weights derived via analytic hierarchy analysis, and wherein different instances of at least one module of the entire system is specialized for each different market. However, Verba discloses these steps [Abstract; Figures 1-4, 9; C2 L13-L36; C3 L26-L37; C4 L38-L60; C6 L24-L53; C22 L66 to C23 L56] to creating a uniform measure of value and a sophisticated computer-implemented business management system, which describes both in general terms, and with respect to specifics useful in real estate marketing where the buyer has its own requirements. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the disclosure of Shoham, Van Etten et al., Lupien and Conklin and include multi-agent system with mathematical algorithm to create a uniform value and a market (buy/sell) system to help agents in marketing their goods and service.

Applicants respectfully submit that Verba's addition to Shoham, Van Etten., Lupien and Conklin does not anticipate the DME. Verba's invention (Verba Abstract) "generates and stores a campaign population, representing different types of marketing campaigns", "processes historical data to predict how campaigns can best match buyer to seller" and used uses Software agents" to "negotiate on behalf of buyer and seller identify potential deals".

Verba (C3, 26-35) describes:

> *"The marketing system further includes an optimization engine that accesses campaign data, person data, property data, agent data and broker data. The optimization engine utilizes a scoring process for ordering the members of a particular population. The scoring process employs an adaptive scoring algorithm that alters the scores based upon relations among at least some of the campaign attributes and person, property, broker, or agent population member attributes."*

Applicants respectfully point out that, although Verba mentions an optimization engine, and using optimization access various types of data, the Verba disclosure never identifies **how** to construct an optimization model of that data, and thus Verba does not provide enablement that

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anticipates the DME. Significantly, Verba fails to provide a method for simultaneously considering all of the attributes of interest (*"campaign data, person data, property data, agent data and broker data"*) to provide a single computation of the degree of satisfaction with the values of those attributes.

Applicants respectfully posit that the *agent population* mentioned in Verba refers to a population of *Real Estate* agents, and not to agents in the sense of *a multi-agent system*, which is a recent distributed artificial intelligence software paradigm that enables robust scaleable decentralized software systems. Verba does mention "market agents that encapsulate a plurality of attributes and operations performed by legal entities" but Verba's description goes on to describe an object-oriented system rather than multi-agent based system. Many of the basic capabilities of a multi-agent system, (which are provided by systems such as DECAF, Zeus, and FIPA-OS) are lacking in Verba's system. Applicants respectfully content that there is no motivation to combine Shoham, Van Etten., Lupien, Conklin and Verba to anticipate the current invention, and that such a combination does not teach the current invention.

The examiner continues (OA, P15):

> *Claims 41-42 and 44 have same limitations as claims 14-15 and 17 above, respectively. Therefore these claims are rejected with same rational as claims 14-15 and 17.*

Applicants respectfully submit the rejections of claims 14-15 and 17. are addressed by the above discussions, and should thus be allowed. Consequently, claims 41-42 and 44 should be allowed by analogous argument.

Discussion of Response to Arguments

4. On OA P. 15, the Examiner states:

> *Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.*

> *In response to Applicant's argument Election/Restriction, Examiner does not agree with Applicant's that claims 57-60 are not restrictive, because.*

> *The scopes of claims 1 and 57 are different. See dependent claims.*
>
> *In response to Applicant's argument that "Conklin's system is an interactive See In re Venner and In re Rundell.*

Applicants respectfully submit that arguments made in light of the amended claims warrant allowance of those claims, and maintain that the scope of claims 1 and 57 are closely related, pertaining to different aspects of a unified invention.

Applicants additionally respectfully note that comparison of the DME with Conklin's invention goes beyond replacement of a manual activity with a mechanical or automatic means. In particular, the "production purchases" mentioned by Conklin (C6, L5-L7) are made with **product descriptions**, rather than **product specifications** ("Production purchasing includes the selection of new vendors, the evaluation of them and their products, conducting contract negotiations, and so on." Additionally, there is no "artificial negotiating entity" in Conklin. Rather, Conklin (C24,L1-L22; C25,L12-C26,L18) provides a secure website, with documentation of all transactions, which permits buyer and seller to negotiate about multiple aspects of a product. Conklin's invention **does not negotiate** on behalf of the buyer or seller, but provides them with a secure channel to propose and alter terms of a negotiated agreement. Note that without the DME's representation, Conklin's buyer and seller are not able to obtain the best match that is provided by the DME's (computational) brokers, acting on their behalf. This is **more than just automation**. Placing a humans in the roles of the DME's Buyers' Agents, Sellers' Agents, and Deal Brokering Agents would not achieve the same outcome as the DME, as those humans would be unable, given human capacity for memory and numeric computation, to compute the best matches in time to be useful to the market participants. Thus, the benefit offered by the DME is fundamentally different than a manual service constructed to mimic the DME.

The examiner continues (OA, P16):

> *The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR 1.111 (c) to consider the references fully when responding to this action.*

> *Saeed Samiee "Customer Evaluation of Products in a Global Market"; Journal of International Business Studies, Vol. 25, No. 3. (3rd Qtr., 1994), pp. 579-604. Saeed discloses consumer research has shown that individuals base their purchasing decisions on information cues. For this reason, information processing is central to all comprehensive consumer behavior models. Information cues can be intrinsic (e.g., product design) and extrinsic (e.g., brand name, price). Although consumers use both intrinsic and extrinsic cues in evaluating products, the latter are likely to be used in the absence of intrinsic cues or when their assessment is not possible. For example, price may be used as a surrogate for performance. To complicate matters, it has also been shown that information search by consumers prior to making purchase decisions is limited.*

Applicants respectfully assert that Samiee's model of customer evaluation considers "extrinsic cues" **as a proxy for intrinsic attribute values** (which are unavailable to the consumer). This ignores the case where the values of extrinsic attributes are valuable in their own right as is the case where a consumer would prefer a committed protocol to a non-committed protocol. It is also the Applicants assertion that, given the current invention, consumers can rely less on evaluation of **indirect evidence** (Samiee's version of "extrinsic cues") and rely more on **direct evidence,** as is present in invention's representation of desired states of attributes, and in the comparison of the states with the attributes of offered goods, and in computed valuation of offers with respect to the composition of the desired states. Thus, the current invention, in providing a market place direct representation of the attribute states of goods, addresses and corrects some of the market inefficiencies cited by Samiee, and will ultimately reduce cases where "Country of Origin" or "Country of Manufacture" labels provide misleading cues versus the desirable qualities of goods.

CONCLUSION

Based on the Remarks above, Applicants respectfully requests allowance of all pending claims.

Respectfully submitted,
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